REMARKS

This is a full and complete response to the Office action dated December 14, 2005. Applicants and their representatives wish to thank the Examiner for conducting a telephone interview on September 7, 2006 regarding Experimental results, and which are further discussed below.

All comments and remarks of record are herein incorporated by reference. Applicant respectfully traverses these rejections and all comments made in the Office action. Nevertheless, in an effort to expedite prosecution, Applicant provides the following remarks regarding the cited references.

DISPOSITION OF CLAIMS

Claims 12, 14, 17-23, 25 and 27 are pending in the application.

REJECTION UNDER 35 USC §103

Remarks Regarding Motivation to Modify the References

Claims 12, 14, 17-23, 25 and 27 stand rejected under 35 USC §103(a) as being unpatentable over **Vonk et al.**, US patent No. 4,904,713, (**"Vonk"**) in view of **Agostinis et al.**, US Patent No. 4,874,821 (**"Agostinis"**).

The Examiner has alleged that **Vonk** discloses a bituminous composition having a block copolymer comprised of alkenyl arene and conjuaged diene blocks, and which may have the sequence A-B-A-B. The Examiner alleges that **Vonk** discloses the claimed invention except for the weight ratio of conjugated diene block B_1 over B_2 ranging from 3.0 to 12.0. To remedy this, the Examiner alleges that **Agostinis** discloses the weight ratio between two polydienic blocks to be in the range of from 0.1 to 0.5 (thus having a ratio from 3.0 to 12.0).

The Examiner therefore concludes that it would have been obvious at the time of the Applicants' invention to incorporate the weight ratio of the two types of polydienic blocks of **Agostinis** in the block copolymer of the Bituminous mixture disclosed by **Vonk**.

Applicants respectfully disagree.

Applicants respectfully assert that no motivation to modify the references has been shown. Applicants respectfully submit that the Examiner is picking and choosing among isolated disclosures of the cited references, and combining such disclosures to depreciate the claimed invention using Applicants' disclosure as a blueprint. See *In re Fine*, 837 F.2d 1071, 5 USPQ.2d 1596 (Fed. Cir. 1988).

Applicants respectfully assert that simply identifying all of the elements of a claim in the prior art does not render a claim obvious. See *Princeton Biochemicals Inc. v. Beckman Coulter*, 411 F.3d 1332, 1338, 75 USPQ.2d 1051 (Fed. Cir. 2005). Instead, the claimed invention must be considered as a whole. See id. at 1337

Without this requirement, examination of an application "might break the invention into its component parts (A+B+C), then find a prior art reference containing A, another B, and another containing C, and on that basis alone declare the invention obvious." See *Richard Ruiz v. Chance*, 357 F.3d 1270, 1275 69 USPQ.2d 1686 (Fed. Cir. 2004). This is a form of hindsight reasoning that uses the application as a roadmap to find the components in a cited reference, and discounts the value of combining existing features in a new way to achieve a new result. See id.

Furthermore, cited references must be considered in their entirety, i.e., as a whole, including portions that would lead away from the claimed invention. W.L. Gore & Associates, Inc. v. Garlock, Inc. 721 F.2d 1540, 220 USPQ 303 (Fed. Cir. 1983), cert. denied, 469 U.S. 851 (1984); MPEP §2141.02 VI.

Applicants respectfully submit that the Examiner unduly focuses on the ratio between diene blocks indicated in the **Agostinis** reference, and ignores what the reference in its entirety teaches. A prima facie case of obviousness is tested by what the combined teachings of the references would have suggested to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ.2d 1596

In the case at hand, **Agostinis** does not merely teach that the ratio between blocks B1 and B2 in the block copolymer B1-A1-B2-A2 is within the range of from 0.1 to 0.5. The **Agostinis** reference furthermore requires that blocks B1 and A1 be linked to each other by a random copolymeric moiety representing approximately 10% of the weight of the total copolymer. See **Agostinis**, column 4, lines 63-68. This is also recited in claim 1 of the **Agostinis** reference, column 7, lines 34-39. A weight percent of 10% should not be considered a trivial amount with regard to such a block copolymer.

Furthermore, although the **Agostinis** reference indicates the weight average molecular weight of the copolymer can be from 30,000 to 250,000, the preferred total molecular weight is from 50,000 to 150,000. Additionally, the copolymers in the inventive examples of the **Agostinis** reference are no more than 75,000 in total molecular weight. See **Agostinis**, examples 1 and 2. As such, they are much smaller than that of the claimed invention.

Therefore, despite the requirement in **Agostinis** of a random copolymeric moiety between blocks A1 and B1, and the low molecular weight of the examples, the Examiner ignores such indications and selects the ratio between the B1 and B2 without providing proper motivation as to why one of ordinary skill in the art would take such ratio for bituminous compositions. Applicants respectfully assert that only by picking and choosing from among the disclosure using the Application as a blueprint would such be chosen for bituminous compositions.

Furthermore, **Agostinis** only references bituminous compositions in a broad sweeping statement in the background regarding the possible uses of block copolymers generally. See **Agostinis**, column 1, lines 26-29. This is also in view of the fact that **Agostinis** is directed to using its copolymer for adhesives. This can be seen by the Examples of **Agostinis**, which test the usefulness of the copolymer's properties in view of traditional adhesive compositions. Thus, there would be no motivation to apply **Agostinis** to bitumen compositions. Applicants respectfully note that obvious to try or experiment is not the proper standard of obviousness. See In re O'Farrell, 853 F.2d 894, 903 7 USPQ 1673 (Fed. Cir. 1988); In re Dow Chemical Co., 837 F.2d 469, 473; 5 USPQ.2d 1529 (1988).

Furthermore, from viewing the Examples of **Agostinis**, one of ordinary skill in the art would have no expectation that such copolymer would have any special properties for use in bituminous compositions.

However, in the Examples of the current application, superior results are clearly shown. Applicants maintain that one skilled in the art would not expect that by using the claimed ratio, along with the other elements of the instant claims, that only one ingredient besides bitumen results would provide such superior results. One of ordinary skill in the art would have no such expectation from viewing **Agostinis**.

Remarks Regarding Unexpected Results and Declaration

The Examiner has alleged in the advisory action of August 31 2006 that although Applicants have demonstrated unexpected results in Table 2 of the present Application, such showing is not commensurate with the claims. The Examiner alleges that the experiments 1, 2 and 3 are based on unequal composition of wt% of conjugated diene in SBS1, SBS2, and SIS, as compared to Experiment 7.

However, Applicants respectfully assert that the experimental results are commensurate with the claims. The Examples 1, 2, and 3 in the present Application show copolymers having 3 blocks, with Examples 1 and 2 having a butadiene midblock and Example 3 having an isoprene midblock. On the other hand, Example 7, which is the example according to the invention, has a "tail", meaning an additional smaller block is added having a molecular weight according to the ratio as defined in the instant claims. Example 7 illustrates superior results in that no additional components besides Bitumen A and Polymer A are needed in order to obtain a good balance of properties for that Bitumenous composition.

By comparing Examples 1, 2, and 3 to Example 7 in the Application, it is demonstrated that by including a "tail" according to the ratio in the current claims, along with other elements as recited in the instant claims, superior results are obtained with regard to bituminous compositions since no additional components are necessary.

However, in the telephone interview with the Examiner on September 7, 2006, the Examiner further indicated that it would be helpful to show experimental results having

the same ratio as the claimed invention, only having butadiene B blocks in contrast to the claimed invention which has at least 80 mol% isoprene.

Applicants respectfully assert that **Vonk** as well as **Agostinis** clearly denote that there should be no difference between the results of the use of butadiene or isoprene. As stated in **Vonk**, the "conjugated dienes are preferably ones containing from 4 to 8 carbon atoms…conjugated diene monomers include: 1,3-butadiene (butadiene), 2-methyl-1,3-butadiene (isoprene)." **Vonk** further states that mixtures of conjugated dienes may also be used" and that the "preferred conjugated dienes are butadiene and isoprene." See **Vonk**, column 2, lines 26-34.

Additionally, **Agostinis** indicates that the B1 and B2 blocks may be polybutadienic blocks, however, "the same advantages, or similar advantages, are achieved, when butadiene is replaced by other dienic monomers." See **Agostinis,** column 2, lines 59-61. Furthermore, in the Examples 1 and 2 of **Agostinis**, butadiene is used as the dienic monomer.

Such disclosures of **Vonk** and **Agostinis** indicate that either butadiene or isoprene can be used and that there is no particular advantage whether butadiene or isoprene is used.

However, the instant claimed invention recites that blocks B_1 and B_2 be at least 80 mole% isoprene. Further, claim 14 recites that blocks B_1 and B_2 be at least 99 mol% isoprene. In view of the indication in **Vonk** and **Agostinis** that there is no advantage whether one uses butadiene or isoprene, one would not expect the use of at least 80 mole% isoprene or at least 99 mol% isoprene, would produce superior results.

Such unexpected results are clearly shown in the present application and further demonstrated in the Declaration of Dr. Erik Trommelen filed along with this reply (attached hereto as Appendix A). As can be seen in the Declaration, two block copolymers SBSb1 and SBSb2 were tested in a manner similar to the experimental results in the present application. As can be seen in Table 1 of the declaration, both copolymers have molecular weights and polystyrene content within the range as specified in the instant claims. Furthermore, the ratio between the first B block and the second b block is within that of the instant claims as well. However, the comparative copolymer

blocks in the Declaration differ from Polymer A of the Application in that the diene blocks are made up of butadiene, whereas the diene block in Polymer A in the Examples of the Application is isoprene.

As can be seen in Table 2 of the Declaration, SBSb1 and SBSb2 both produce poor results for T-Peel at 4°C, showing 1 and 4, respectively.[1] Accordingly, both SBSb1 and SBSb2 would require additional components, similar to SBS1 and SBS2, to produce a satisfactory balance of properties in bitumen compositions.

However, as shown in Experiment 7 of Table 2 in the Application, Polymer A according to the present invention shows good T-Peel values at 5 °C, and requires no additional components besides bitumen A. Therefore, the Examples in the Application, along with the Declaration show that the bituminous composition according to the instant claims produces unexpectedly superior results.

Therefore, in view of the Declaration and Examples in the Application, as well as the lack of motivation to modify the references, Applicants respectfully request that the 35 USC §103 rejection be withdrawn.

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[1] It should be noted that in this instance T-peel at 4°C in the declaration is comparable to T-peel at 5°C in Table 2 of the Application, as there is only 1 degree difference in the tests.

Conclusion

Having addressed all issues set out in the Office action, Applicant respectfully submits that the claims are in condition for allowance and respectfully request that the claims be allowed.

Respectfully submitted,
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